

IN THE CLAIMS

Claims 12, 18 and 20 have been cancelled. Claims 1, 4, 5, 7, 8, 11, 13, 15 - 17, 19, 25, 27, 29, and 31 have been amended.

1. (currently amended) A method, comprising:

receiving a plurality of packets and inserting the plurality of packets in a packet queue;

classifying the packets according to a classification criterion after the plurality of packets have been inserted in the packet queue;

sending a packet bundle and a corresponding packet bundle descriptor to a host wherein the packet bundle is generated using the packets that are uniformly classified with respect to the classification criterion; and

receiving the packet bundle and the corresponding packet bundle descriptor; and  
processing the packet bundle according to the corresponding packet bundle descriptor.

2. (previously presented) The method according to claim 1, wherein said sending comprises:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and its corresponding packet bundle descriptor;  
and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

3. (original) The method according to claim 2, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

4. (currently amended) A method for an input and output controller, comprising:

receiving a plurality of packets in a packet queue;

classifying the packets in the packet queue according to a classification criterion,

the classifying including looking ahead in the packet queue to classify the packets in the packet queue; and

sending a packet bundle to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion..

5. (currently amended) The method according to claim 4, wherein said sending includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and [[its]] a corresponding packet bundle descriptor; and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

6. (original) The method according to claim 5, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

7. (currently amended) A method for a classification based packet transferring mechanism, comprising:

receiving a plurality of packets and inserting the packets in a packet queue;

classifying the packets according to a classification criterion; [[and]]

rearranging an order of the packets in the packet queue based on the classifying of the packets; and

sending a packet bundle to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion.

8. (currently amended) The system according to claim 7, wherein said sending includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and [[its]] a corresponding packet bundle descriptor; and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

9. (original) The method according to claim 8, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

10. (original) The method according to claim 9, wherein the packet bundle descriptor includes:

a bundle descriptor providing information about the packet bundle; and

at least one packet descriptor each of which provides information about a packet in the packet bundle.

11. (currently amended) A method for a classification based packet transferring mechanism, comprising:

classifying [[the]] packets according to a classification criterion; and

sending a packet bundle to a host wherein the packet bundle is generated using packets that are uniformly classified with respect to the classification criterion,

said sending including determining the packet bundle for transfer according to a pre-determined criterion, generating the packet bundle and [[its]] a corresponding packet bundle descriptor, and transferring the packet bundle and [[its]] the corresponding packet bundle descriptor to the host, the classification criterion including a session number, the pre-determined criterion including a priority associated with a packet, the packet bundle descriptor [[including a bundle descriptor]] providing information about the packet bundle and at least one packet descriptor, each of which provides information about a packet in the packet bundle, and said packet bundle descriptor including [[at least some of]] a number of packets in the packet bundle, a session number identifying the session information of the packets in the packet bundle, and a priority value specifying the priority of the packet bundle.

Claim 12 (cancelled).

13. (currently amended) A method for a host, comprising:

receiving a packet bundle and [[its]] a corresponding packet bundle descriptor;

processing the packet bundle; and

updating a packet session ~~using the packet bundle~~ according to the packet bundle descriptor using contents of the packet bundle.

14. (original) The method according to claim 13, further comprising:

identifying a session number from the packet bundle descriptor prior to said updating.

15. (currently amended) A system, comprising:

an input and output controller with a classification based packet transferring mechanism for receiving packets and transferring a packet bundle with ~~[[its]]~~ a corresponding packet bundle descriptor; and

a host for receiving the packet bundle and ~~[[its]]~~ the corresponding packet bundle descriptor and for updating a session ~~using the packet bundle~~ based on the packet bundle descriptor using contents of the packet bundle.

16. (currently amended) A system, comprising:

an input and output controller with a classification based packet transferring mechanism for receiving packets and transferring a packet bundle with ~~[[its]]~~ a corresponding packet bundle descriptor; and

a host for receiving the packet bundle and its corresponding packet bundle descriptor and for updating a session ~~using the packet bundle~~ based on the packet bundle descriptor using contents of the packet bundle,

wherein the classification based packet transferring mechanism includes:

a packet classification mechanism for classifying received packets;

a packet grouping mechanism for generating the packet bundle using classified packets and ~~[[the]]~~ its corresponding packet bundle descriptor; and

a transfer scheduler for transferring, at a time determined based on a pre-determined criterion, the packet bundle and the corresponding packet bundle descriptor to the host.

17. (original) The system according to claim 16, wherein the host comprises:

a notification handler for receiving the packet bundle and its corresponding

packet bundle descriptor;

a packet bundle processing mechanism for processing the received packet bundle and the corresponding packet bundle descriptor; and

a session updating mechanism for updating ~~[[a]] the session using the packet bundle~~ according to the packet bundle descriptor using the contents of the packet bundle.

Claim 18 (cancelled).

19. (currently amended) An input and output controller, comprising:

a packet receiver for receiving ~~at least one packet~~ a plurality of packets and inserting the plurality of packets into a packet queue; and

a classification based packet transferring mechanism for generating and transferring a packet bundle to a host and ~~[[its]] a~~ corresponding packet bundle descriptor to a host, wherein the classification based packet transferring mechanism includes:

a packet classification mechanism for classifying the received plurality of packets according to a classification criterion after the plurality of packets have been inserted in the packet queue;

a packet grouping mechanism for generating the packet bundle based on the classified packets and the corresponding packet bundle descriptor; and

a transfer scheduler for transferring, at a time determined based on a pre-determined criterion, the packet bundle and its corresponding packet bundle descriptor to the host.

Claims 20 - 24 (cancelled).

25. (currently amended) A machine-accessible medium encoded with data, the data, when accessed, causing:

receiving a plurality of packets and inserting the plurality of packets into a packet queue;

classifying the packets according to a classification criterion after the plurality of packets have been inserted in the packet queue;

sending a packet bundle and a corresponding packet bundle descriptor to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion; [[and]]

receiving the packet bundle and the corresponding packet bundle descriptor; and  
processing the packet bundle according to the corresponding packet bundle descriptor.

26. (previously presented) The medium according to claim 25, wherein said sending includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and its corresponding packet bundle descriptor;  
and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

27. (currently amended) A machine-accessible medium encoded with data for input and output control, the data, when accessed, ~~causing~~ causes:

receiving a plurality of packets in a packet queue;

classifying the packets in the packet queue according to a classification criterion,  
the classifying including looking ahead in the packet queue to classify the packets in the  
packet queue; and

sending a packet bundle to a host wherein the packet bundle includes a number  
of packets that are uniformly classified with respect to the classification criterion.

28. (previously presented) The medium according to claim 27, wherein said  
sending includes:

determining the packet bundle for transfer according to a pre-determined  
criterion;

generating the packet bundle and its corresponding packet bundle descriptor;  
and

transferring the packet bundle and [[its]] a corresponding packet bundle  
descriptor to the host.

29. (currently amended) A machine-accessible medium encoded with data for a  
classification based packet transferring mechanism, the data, when accessed, ~~causing~~  
causes:

receiving a plurality of packets and inserting the packets in a packet queue;

classifying the packets according to a classification criterion; [[and]]

rearranging an order of the packets in the packet queue based on the classifying  
of the packets; and

sending a packet bundle to a host wherein the packet bundle includes a number  
of packets that are uniformly classified with respect to the classification criterion.

30. (previously presented) The medium according to claim 29, wherein said



sending includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and ~~[[its]]~~ corresponding packet bundle descriptor;  
and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

31. (currently amended) A machine-accessible medium encoded with data for a host, the data, when accessed, ~~causing~~ causes:

receiving a packet bundle and ~~[[its]]~~ a corresponding packet bundle descriptor;  
processing the packet bundle; and  
updating a packet session ~~using the packet bundle~~ according to the packet bundle descriptor using contents of the packet bundle.

32. (original) The medium according to claim 31, the data, when accessed, further causing:

identifying a session number from the packet bundle descriptor prior to said updating.